

## New Combinations in the genus *Helmiopsiella* (Sterculiaceae)

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**Summary.** — Two species of *Dombeya*, and the single species ascribed to *Dendroleandria* are transferred to the genus *Helmiopsiella* (Sterculiaceae). The new combinations *H. ctenostegia* (Hochr.) L. Barnett, *H. poissonii* (Arènes) Capuron ex L. Barnett, and *H. leandrii* (Hochr.) L. Barnett are presented. A map and key to the four species of *Helmiopsiella* are provided.

**Résumé.** — Deux espèces de *Dombeya*, et la seule espèce de *Dendroleandria* sont transférées au genre *Helmiopsiella* (Sterculiaceae). Les combinaisons nouvelles *H. ctenostegia* (Hochr.) L. Barnett, *H. poissonii* (Arènes) Capuron ex L. Barnett, et *H. leandrii* (Hochr.) L. Barnett sont établies. Une carte de répartition et une clé de détermination des quatre espèces sont présentées.

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*Helmiopsiella* Arènes, previously known by the single species, *H. madagascariensis* Arènes, is endemic to Madagascar. This genus, together with *Nesogordonia* Baillon (14 species in Madagascar; 3 species in Africa), and *Helmiopsis* Perrier (8 species in Madagascar), constitute the tribe *Helmiopsideae* Arènes of the *Sterculiaceae*. Although the distinctiveness of the *Helmiopsideae* from the *Dombeyeae* is doubtful (BARNETT, 1987), *Helmiopsiella* is nevertheless most closely related to *Helmiopsis*, with which it shares caducous epicalyx bracts, fusion of stamens and staminodes into a short annulus, a single style, apically-winged seeds, and loculicidal, more or less woody capsules. *Helmiopsiella* differs from *Helmiopsis* principally in bearing staminodes opposite the sepals rather than opposite the petals, an indumentum of stellate scales or hairs rather than peltate or fimbriate scales, lack of nectariferous tissue versus nectariferous tissue on the calyx and/or petals, and villous locules of the ovary, with the hairs detaching as the fruit develops, as opposed to locules that are glabrous in all stages of flowering and fruiting.

Examination of fruiting specimens of Malagasy *Sterculiaceae* reveals that three additional species should be transferred to *Helmiopsiella*. They possess the distinctive fruit of that genus : a somewhat woody, conical, loculicidal capsule with hairs in the axis of the locules that detach at dehiscence, and they also have apically-winged seeds. These three additional species include two species of *Dombeya*, *D. ctenostegia* Hochr. and *D. poissonii* Arènes, and *Dendroleandria leandrii* (Hochr.) Arènes, the sole member of the latter genus.



## HELMIOPSIELLA Arènes

- Bull. Mus. Nat. Hist. Nat., Paris, 2<sup>e</sup> sér., 28 (1) : 150 (1956); Fl. Madag. 131 : 110 (1959).  
— *Dendroleandria* ARÈNES, Mém. Inst. Sci. Mad., sér. B, 7 : 66 (1956); Fl. Madag. 131 : 152 (1959). Type : *D. leandrii* (Hochr.) Arènes.  
— *Dombeya* sect. *Paracheirolaena* HOCHR., Candollea 3 : 13 (1926); ARÈNES, Candollea 16 : 296 (1958); Fl. Madag. 131 : 230 (1959). Type : *D. ctenostegia* Hochr.

The generic names *Dendroleandria* and *Helmiopsiella* were both published in 1956. The printers' date is "11-5-1956" for *Helmiopsiella*, and that for *Dendroleandria* is the "4<sup>e</sup> trimestre 1956". Therefore, when the two names are treated as synonyms, *Helmiopsiella* has priority.

Large shrubs or tree, to 25 m in height. Young stems and leaves bearing an indumentum of stellate scales or stellate hairs, usually glabrescent in age. Leaves ovate, apex acute, base cordate; margins crenate to crenulate (entire to serrulate in *Helmiopsiella ctenostegia*), palmately 3-7-veined, veins raised below.

Inflorescence terminal of axillary, 1-3-flowered cymes or many-flowered paniculate cymes, peduncles and pedicels glabrescent or with a dense indumentum of stellate hairs and scales. Epicalyx of 3, entire or fimbriate to pinnatilobed bracts, in a single whorl immediately subtending the flower or dispersed along the length of the pedicel, usually caducous. Sepals 5, sometimes persistent in fruit. Petals 5, yellow, usually caducous. Androecium monadelphous, of 15-60 stamens, fused at least basally with 5 antisepalous staminodes. Anthers linear, dorsifixed; connective broad, sometimes prolonged at the apex. Gynoecium 5-10 carpellate; locules villous toward the axis and along the future lines of dehiscence, hairs falling free as the fruit matures; ovules 2-3 per locule, ascending; style simple, 5-10-fid at the apex.

Fruit capsular, woody, conical to pyriform, loculicidal; carpel walls glabrous when mature; seeds 1-3 per carpel, seed wing apical.

TYPE-SPECIES : *Helmiopsiella madagascariensis* Arènes.

DISTRIBUTION : *Helmiopsiella* is found in the Domaine du Sud and Domaine de l'Ouest, including the secteur nord, of HUMBERT (1965), (Figure 1). *Helmiopsiella poissonii* is known only from the Anosiravo summit, a calcareous peak in the Montagne des Français Massif of the extreme north, near Diégo-Suarez. *Helmiopsiella leandrii* is known from scattered localities in the northwestern calcareous plateaus ("Tsingy") north of the Tsiribihina River. Further south, *H. ctenostegia* occurs in forests between Tsiribihina and the Mangoky Rivers. The range of *H. madagascariensis*, principally in the Domaine du Sud, extends south from the Fiherenana Valley as far east as Behara near Ambovombe. There is also a single, isolated collection of this last species from the vicinity of Ihosy.

The western-southwestern distribution of *Helmiopsiella*, with a disjunct element in the northwest is an uncommon pattern shared with a few other plant genera in Madagascar, including *Delonix* Raf. and *Bauhinia* L. (both *Caesalpiaceae*), *Adansonia* L. (*Bombacaceae*), and *Uncarina* (Baillon) Stapf (*Pedaliaceae*). This pattern is referred to as "pan-occidental" by KOEHLIN et al. (1974). HUMBERT (1965) also noted the occurrence of related plants in disjunct



calcareous regions of both the extreme north and south of the island. He suggested that the occurrence of taxa such as *Tetrapterocarpon geayi* Humbert (*Caesalpiaceae*) in the Domaine du Sud and in the secteur nord of the Domaine de l'Ouest may be evidence that the disjunct calcareous substrates of western Madagascar were at one time continuous. The occurrence of *H. poissonii* in the extreme north, with its closest relatives in isolated calcareous zones throughout the Domaine de l'Ouest and Domaine du Sud appears to illustrate this same phenomenon.

All species of *Helmiopsiella* occur predominantly on limestone, although collections also have been reported on sand (*H. ctenostegia* and *H. madagascariensis*), laterite (*H. leandrii*), and gneiss (*H. madagascariensis*). Most *Helmiopsiella* species are found from sea level to approximately 500 m; *H. poissonii* consistently has been found near 350 m altitude; *H. madagascariensis* occurs from sea level to 500 m, with one collection from Ihosy at 650 m.

#### KEY TO SPECIES OF HELMIOPSIELLA

1. Leaf margins serrulate; inflorescences many-flowered paniculate cymes; dense, wooly pubescence covering the leaf undersurfaces, calyces, peduncles, and pedicels; petals 1 cm or less in length . . . . . 1. *H. ctenostegia*
- 1'. Leaf margins crenate to crenulate; inflorescences 1-3-flowered cymes; sparse pubescence on the leaf undersurfaces, calyces, peduncles, and pedicels; petals 2 cm or more in length.
  2. Gynoecia 5-carpellate; scars from the fallen epicalyx bracts in a single whorl immediately subtending the flower or fruit . . . . . 2. *H. poissonii*
  - 2'. Gynoecia (6-)7-10-carpellate; scars from the fallen epicalyx bracts dispersed along the length of the pedicel several millimeters below the flower or fruit.
    3. Stamens 15-25; gynoecia usually 7-8-carpellate (rarely 6- or 10-carpellate); sepals and petals caducous . . . . . 3. *H. madagascariensis*
    - 3'. Stamens 40-60; gynoecia 10-carpellate; sepals and sometimes petals persistent in fruit . . . . . 4. *H. leandrii*

#### 1. *Helmiopsiella ctenostegia* (Hochr.) L. Barnett, *comb. nov.*

— *Dombeya ctenostegia* HOCHR., *Candollea* 3 : 98 (1926); ARÈNES, *Candollea* 16 : 296 (1958); *Fl. Madag.* 131 : 230 (1959).

TYPE : *Perrier de la Bâthie 1425* (lecto-, P, here designated; isolecto-, P).

The lectotype is the more complete of the two specimens of *Perrier 1425* deposited at Paris.

This species was segregated by both HOCHREUTINER (1926) and ARÈNES (1958, 1959) as the only member of *Dombeya* section *Paracheirolaena* because of its pinnatilobed epicalyx bracts (said to be reminiscent of those of *Cheirolaena* Benth.), as well as its unusual inflorescence, especially large number of stamens, and absence of nectariferous tissue. Although ARÈNES did observe specimens in fruit, as evidence by his description in the *Flore*, he apparently did not associate the capsule with that of *Helmiopsiella*. Fruits of the collection he examined (*Service Forestier 5302-SF*), are not-well developed, and the seeds are malformed or



abortive with reduced wings. Had ARÈNES seen the typical winged seeds of *H. ctenostegia*, I presume that he would have recognized the correct generic affinity of the species.

*Helmiopsiella ctenostegia* is the most distinctive member of the genus for several reasons. Dense, persistent pubescence covers the undersurfaces of leaves, the calyces, the peduncles, and the pedicels. All other species are glabrescent. The leaves are minutely serrulate, with secondary and tertiary veins culminating in tiny marginal teeth, as opposed to the crenate margins with vein endings inconspicuous, usually terminating the lobes or in the sinuses between lobes in the other three species. The cymose inflorescence is of complex structure and many-flowered; the main axis is terminal, although additional paracladia arise from the upper leaf axils, with more distal paracladia being subtended by fugacious bracts. The corollas are comparatively small, to 1 cm in length. The epicalyx bracts are deeply pinnatifid, whereas those of the other three species are entire, or occasionally fimbriate in *H. leandrii*. In addition, the anthers are shorter and the filaments longer and narrower than in other species of the genus; therefore the stamens do not appear laminar, as they tend to appear in other species of *Helmiopsiella*.

*Helmiopsiella ctenostegia* is a tree (5)15-25 m in height. The main inflorescence axis, like that of *H. madagascariensis* and *H. leandrii*, is terminal. Stamens are 40-45 in number, and the gynoecium is 5-carpellate. Sepals are persistent in fruit. The capsule is externally pubescent and strongly 5-costulate, 11-17 mm long and 11-19 mm wide. Seeds are solitary or paired in each locule, and measure ca. 4 × 2 mm; the membranous wings are ca. 9 × 4 mm.

COMMON NAMES : Halampo (*Service Forestier 15850-SF*); Kivozy (*Service Forestier 15797-SF*); Latabarika (*Service Forestier 5302-SF*).

MATERIAL EXAMINED : *Capuron 28917-SF*, forêt d'Andranomena-Marofandilia (Morondava), 28-29.XI.1969 (P); *Capuron 29126-SF*, Menabe : partie sud de la forêt de Marofindilia (*sic*) (Morondava), aux environs de Bekonazy, sur sables hygromorphiques, 30.III.1970 (P); *Perrier 1425*, bords de la rivière Hopy entre Andranomavo et Itampitso (Ambongo), V.1902 (P); *Service Forestier 5302-SF*, Tsimitia (Morondava), 24.V.1952 (P); *Service Forestier 15797-SF*, Ampansanovy (?) - Ankazoabo, 12.IV.1956 (P); *Service Forestier 15850-SF*, Betsipotika-Morondava, 24.III.1956 (P).

## 2. *Helmiopsiella poissonii* (Arènes) Capuron ex L. Barnett, *comb. nov.*

— *Dombeya poissonii* ARÈNES, *Candollea* 16 : 284 (1958); *Fl. Madag.* 131 : 201 (1959).

TYPE : *Poisson 88* (holo-, P).

This species conforms unmistakably to *Helmiopsiella* in its capsule and seed morphologies, floral morphology, and vestiture. It would have been an incongruous addition to *Helmiopsiella sensu* ARÈNES because of its 5-carpellate, rather than 7-8-carpellate gynoecium, its axillary inflorescences, and its sepals persistent in fruit. Nonetheless, these characters occur in other species of *Helmiopsiella* as here construed.

*Helmiopsiella poissonii* is a large shrub or tree 5-7 m height. The species is characterized by the combination of very large (2.5-3.2 cm long), showy petals and 5-carpellate ovary. Flowers are solitary in the leaf axils, the exclusively axillary peduncles being unique in the genus. The 15 stamens are somewhat laminar in appearance because of their short filaments



and broad connectives. The only collection of fully mature material (*Capuron 20105-SF*) indicates that the fruit, like that of *H. madagascariensis*, is externally glabrescent at the time of dehiscence. The capsule is 16-23 × 17-20 mm; seeds are 2(-3) per locule, superposed, 8-10 × 3-4 mm, bearing short wings ca. 8 × 4 mm.

CAPURON's annotation of herbarium material demonstrates that he also recognized this plant as a species of *Helmiopsiella*. However, the new combinations remained unpublished, and therefore is validated here.

MATERIAL EXAMINED : *Capuron 20105-SF*, massif calcaire de la Montagne des Français, 26.XI.1958 (BR, K, P, TEF); *Capuron 20353-SF*, massif de la Montagne des Français, sommet de l'Anosivaro, à l'est de Diégo-Suarez vers 350 m d'alt., 7.XI.1961 (TEF); *Capuron 20915-SF*, massif calcaire de la Montagne des Français, sommet d'Anosiravo, 13.III.1962 (P, TEF); *Capuron 28740-SF*, Montagne des Français, calcaires du sommet de l'Anosivaro, 2.II.1969 (TEF); *Poisson 88*, Montagne des Français. 7.I.1917 (P).

### 3. *Helmiopsiella madagascariensis* Arènes

Bull. Mus. Nat. Hist. Nat., Paris, 2<sup>e</sup> sér., 28 (1) : 150 (1956); Fl. Madag. 131 : 110 (1959).

TYPE : *Decary 3788* (lecto-, here designated, P; isolecto-, P).

Four sheets of the type collection are deposited in the herbarium of the Muséum National d'Histoire Naturelle in Paris (P); the sheet with the most ample material has been chosen as the lectotype.

This species is easily distinguished from other species of *Helmiopsiella* by its usually 7-8-carpellate gynoecium, 15-25 stamens, and narrower, more elongate leaves. The 1-3-flowered cymes may be terminal or axillary. As in *H. ctenostegia*, the main axis is terminal, with additional paracladia in the upper leaf axils or in the axils of lateral inflorescence bracts. The stamens are somewhat laminar in appearance. *Helmiopsiella madagascariensis* is a shrub or small tree 3-6(-12) m in height. It has a broad geographic range in southwestern Madagascar, and has been collected many times in the vicinity of Tulear, where it is locally common in the dry, spiny forest of that region.

The collection from the vicinity Ihosy (*Capuron 22619-SF*) is unusual. It is disjunct from the main range of the species by approximately 200 km. The leaf margins are more finely crenulate than those of other specimens. The gynoecium varies from 6-carpellate to 10-carpellate, and the pistil vestiture is persistent on the developing capsule. Unfortunately, there is insufficient material from this locality to determine whether the variation concerned is populational in nature and thus deserving of varietal status, or is simply an atypical individual.

COMMON NAMES : Belelo (*Service Forestier 12689-SF*); Selivato (*Service Forestier 5297-SF*); Sely (*Service Forestier 4979-SF*); Yala (Tandroy Dialect) (*Rakotoson 10765-SF*, *Service Forestier 25836-SF*).

MATERIAL EXAMINED : *Barnett et al. 504, 505, 506, 507*, R.N. 7, 90 km NE of Tulear, 25.III.1985 (MO, TAN, TEX); *Barnett et al. 508*, 57.2 km NE of Marine Research Station, Tulear, on R.N. 7, 26.III.1985 (MO, TAN, TEX); *Bosser 14270*, environs de Tulear, III.1960 (K, P, TAN); *Capuron 514*, route de Tulear-Sakaraha km 44, 23.II.1949 (P); *Capuron 6937-SF*, bush, sur calcaires, aux environs de la Table



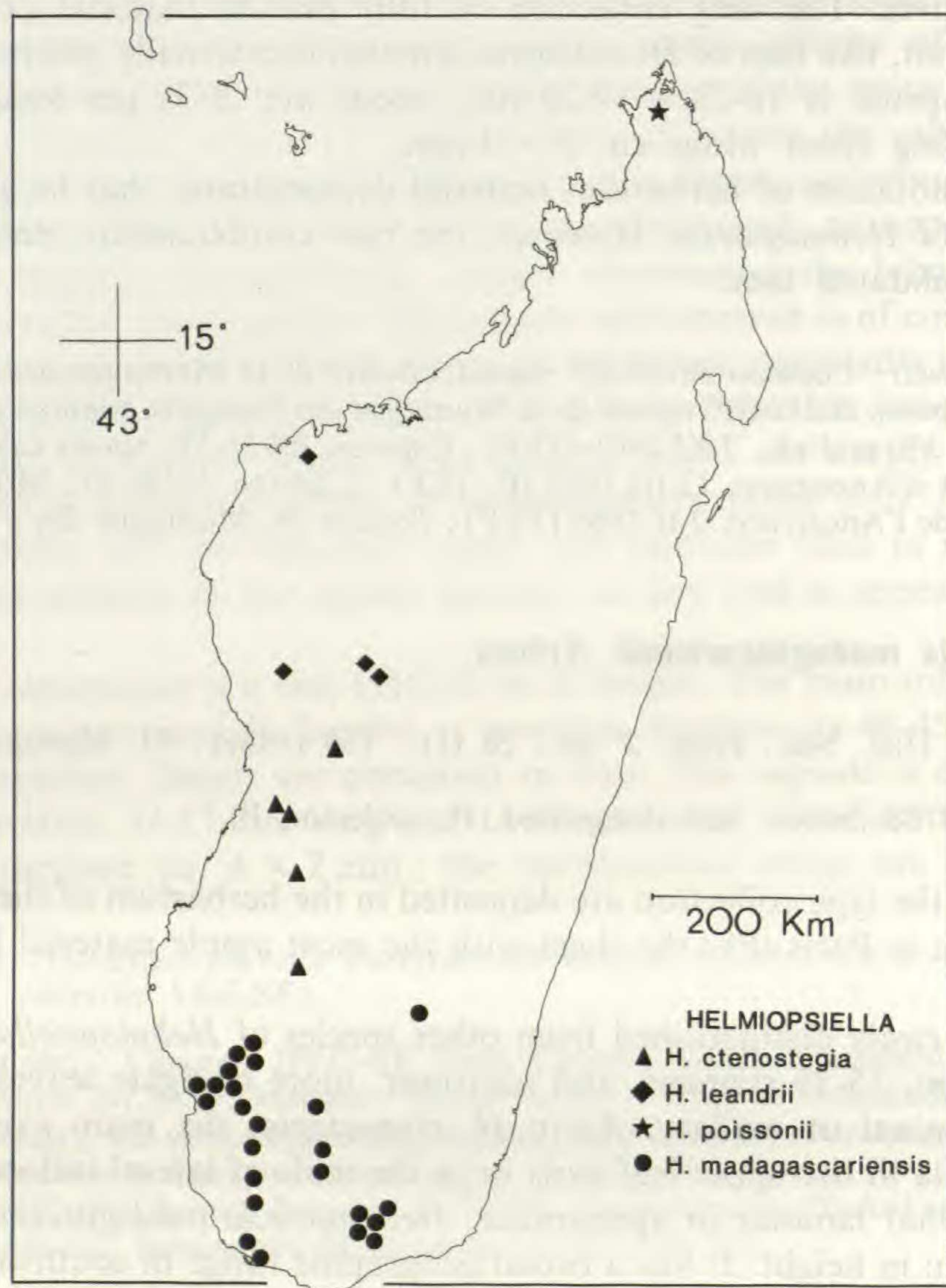


FIG. 1. — Distribution of *Helmiopsiella* species in Madagascar.

(Tulear), IV.1953 (P); *Capuron 11693-SF*, bush, aux environs d'Ambia, au Nord d'Antanimora, XI.1955 (P); *Capuron 11878-SF*, bush, sur calcaires, au Nord de Bevoalavo (Basse Menarandra), III.1955 (P); *Capuron 18625-SF*, bush, sur calcaire, aux environs de Belofy (P.K. 35-40 de la route Tulear-Sakaraha), 27.VI.1958 (P); *Capuron 22492-SF*, bush dégradé, entre Antanimora et la vallée de l'Ikonda (sur la piste d'Imanombo), 24.I.1963 (P); *Capuron 22619-SF*, forêts tropophylles, dans le bassin de la Menarahaka, près du carrefour des routes d'Ihoso à Ivohibe et Lakora, vers 650 m d'alt. (MO, P); *Capuron 24137-SF*, bush de transition avec la forêt tropophylle sur la piste de Maromiandra (Tulear) au Plateau de Mikoboka, I.VI.1965 (P); *Capuron 27941-SF*, formations de transitions entre le bush et la forêt tropophylle, vers le P.K. 48 de la route Tulear-Sakaraha, 8-12.XI.1967 (P); *Chauvet 8*, environs de Tulear-bas de la Table, 14.I.1961 (P); *Chauvet 99*, P.K. 18, route Tulear-Tananarive, 16.V.1961 (P); *Chauvet 124*, km 25 route Tulear à Tananarive, 20.X.1961 (P); *Croat 30, 953*, Prov. Tulear, 8-16 km E of Tulear on road to Tananarive, forested slopes, elev. 50 m, 7.II.1975 (MO); *Decary 3788*, Ambovombe-Antanimora, sur les gneiss, s.d. (P); *Decary 8855*, Antanimora, Dist. Ambovombe, 28.IV.1931 (BR, K, P, TAN); *Dequaire 27590*, colline aux environs de Tulear, thalweg près du Fiherenana, alt. 50 m, 13.III.1953 (P); *Dorr et al. 4111*, Route Nationale 7, 35.6 km E of Tulear, spiny forest of calcareous plateau, 21.III.1985 (MO, TAN); *Herb. Sta. Agr. lac. Alaotra 27590*, s.d. (TAN); *Homolle 1586*, Tulear, 1946



(P); *Humbert 14351*, vallée du Fiherenana, à 30-35 km en amont de Tulear, coteaux calcaires, rive droite, bush xérophile, alt. ca. 300 m, III.1934 (BR, K, P, TAN); *Humbert 20728*, plateau calcaire (jurassique) à l'Ouest de Betioky, alt. 300 m, 17.II.1947 (P); *Humbert 28863*, environs d'Antanimora (Androy), bush xérophile sur terrains cristallins, alt. 200-500 m, s.d. (P); *Humbert 29556*, forêt de Beandro, à 55-60 km au N.E. de Tulear, forêt tropophile sur calcaire et sables, alt. 200-250 m, 25.III.1955 (P); *Humbert & Capuron 28830*, environs d'Antanimora (Androy), bush xérophile sur terrains cristallins, alt. 200-500 m, 6-9.II.1955 (BR, K, P, TAN); *Humbert & Capuron 29375*, vers l'embouchure de la Menarandra, de Bevoalava à Andazondranto, bush xérophile sur calcaire, alt. 1-150 m, s.d. (A, P); *Keraudren 735*, route Tulear à Tongobory dans bush calcaire avant l'Onilahy, III.1960 (P); *Keraudren 807*, plateau calcaire mahafaly à 3 km au S-SW de Beomby (ouest d'Edjeda (*sic*)), III.1960 (P); *Keraudren 1366*, environs de Tulear, sur plateau calcaire à 40 km le long de la route, II.1962 (P); *Mabberley 950*, Km 20-22, N 7 Tulear-Ihosi, alt. 120 m, 14.IV.1971 (EA, FHO, K, MO, P); *Mabberley 987*, P.K. 897, N 7, near Andranavory, alt. 400 m, 15-16.IV.1971 (K); *Mabberley 1002*, (FHO, K); *Montagnac 119, 129*, S.O. Madagascar, s.d. (P); *Morat 2442*, bush calcaire, Bezaha, Tongobory, II.1967 (P, TAN); *Morat 4352*, calcaire du plateau Mahafaly au N.O. de Edjeda (*sic*) I.1974 (TAN); *Peltier 2934*, Befely (*sic*) Tulear, 19.II.1961 (P, TAN); *Perrier de la Bâthie 19228-SF*, 300 m alt., au N de Fohirenana (*sic*), Plateau de Bara, III.1933 (P); *Poisson 509*, collines calcaires au-dessus de Miary et du bas Fiherenana, 26.IV.1922 (P); *Rakotoson 10765-SF*, Ankilivalo, Dist. Fort Dauphin, 19.II.1960 (P); *Ramarokato 5042*, Behara, Dist. Androy, 22.II.1953 (P, TAN); *Reserves Naturelles 4979 RN*, Tulear, Km 65, route de Tananarive, 2.V.1952 (TAN); *Service Forestier 509-SF*, environs de la montagne de la Table; 23.II.1949 (P); *Service Forestier 4979-SF*, route Tulear-Tananarive, P.K. 65, 2.V.1952 (P); *Service Forestier 5297-SF*, forêt Ambararatra poste Antanimora Dist. Androy, 22.IV.1952 (P, TAN); *Service Forestier 9907-SF*, route Antanimora-Ambia (Ambovombe), 8.V.1954 (P); *Service Forestier 10295-SF*, Belio-Bekily, 15.V.1954 (P); *Service Forestier 12689-SF*, vallée de l'Onilahy, près de Maroamalo, Ambohimahavelona, Tulear, 15.II.1955 (P); *Service Forestier 25836-SF*, Ankarano-Sud, Canton et District Bekily, 12.I.1966 (P).

#### 4. *Helmiopsiella leandrii* (Hochr.) L. Barnett, *comb. nov.*

— *Ruizia leandrii* HOCHR., Arch. Sci., Lausanne 1 : 413 (1948).

— *Dendroleandria leandrii* (HOCHR.) ARÈNES, Mém. Inst. Sci. Mad., sér. B, 7 : 65 (1956); Fl. Madag. 131 : 152 (1959).

TYPE : *Leandri 995* (lecto-, here designated, P; isolecto-, P).

The lectotype of *Ruizia leandrii* Hochr. is the sheet in the Paris herbarium annotated by HOCHREUTINER, " *Ruizia leandrii* Hochr. sp. nov. det. Hochreutiner 1948 ". No material of this collection is deposited in Geneva, where HOCHREUTINER worked.

This species was first ascribed to the genus *Ruizia* Jacq. because of its 10-carpellate ovary. (*Ruizia*, a genus endemic to Réunion, is also 10-carpellate. It differs from *Helmiopsiella* and most other *Dombeyae* in lacking staminodes and in being heterophyllous, with greatly dissected to palmately lobed juvenile leaves). Thinking the androecium was unique in being triseriate, ARÈNES (1956) described the genus *Dendroleandria* to accomodate the species. Although the fruit was unknown when *Dendroleandria* was described, fruiting material collected since (*Randriamiera 8634 RN*) has provided new information about the correct placement of this species.

With respect to *Dendroleandria*, it is difficult to interpret what ARÈNES intended when he described the androecium as being " 3-seriate ". The androecium is monadelphous, composed of stamens and staminodes fused in a single column, although one series of stamens branches midway along the length of the column. The staminodes appear to be separate from the androecial column at early stages of floral development and therefore, may have been



interpreted as a separate androecial whorl. However, the staminodes in older flowers, i.e. those at anthesis, clearly are fused with the staminal column.

A fringe-like structure appears in the illustration that ARÈNES published (1956, Fig. 1, 6; 1959, Fig. XXXVI, 6) of the androecium, although this structure is not discussed in the text. It is not known whether this fringe constitutes one of the "tri-seriate" units ascribed to the androecium. Furthermore, it has not been possible to determine the identity of the structure, as I have not been able to locate it in any flowers. In older flowers of *Helmiopsiella leandrii*, the anthers of the androecial whorl occasionally fall off, leaving a series of filaments fused at the base and free at the apex. This series of naked filaments is fringe-like in appearance and may be the source of the structure in the illustration.

*Helmiopsiella leandrii* is a tree 5-10 m in height. The inflorescences are axillary and terminal, with several one-flowered, short peduncles clustered at the apices of the branches. Margins of the epicalyx bracts are entire or may be slightly fimbriate (*Cremers 3802*). The stamens range from 40-60 in number, and appear somewhat laminar because of their elongate, linear anthers. The gynoecium is 10-carpellate, and the stigmatic surfaces are broad and conspicuously papillate. The fruit is ca. 27 mm long and ca. 15 mm wide. The seeds are paired in each locule, superposed, and measure ca. 4 × 2 mm, each bearing a wing ca. 10 × 4 mm.

MATERIAL EXAMINED : *Cremers 3802*, Tsingy du Bemaraha (Est Antsalova), 4.II.1975 (P, TAN); *Leandri 995*, Nord d'Antsalova, collines latéritiques, s.d., (P); *Leandri 1045*, Tsingy de Bemaraha (9<sup>e</sup> Réserve), rochers calcaires alt. 200 m, lisières entre Antsiaraza et Trano P(assage), 27.II.1933 (P); *Randriamiera 8634-RN*, Canton Andranomava, District Soalala, 5.II.1965 (P, TAN, TEF).

COMMON NAME : Varo (*Randriamiera 8634-RN*).

ACKNOWLEDGMENTS : This work was supported by National Science Foundation (U.S.A.) Grant BSR-8414032. I thank the curators and technical staff at BR, FHO, G, K, MO, P, TAN, and TEF. Thanks are due M. R. CHEEK, L. J. DORR, and P. A. FRYXELL for assistance and advice.

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